SITE ASSESSMENT REPORT
FOR
QUALITY CLEANERS SITE
BELLEVILLE, ST. CLAIR COUNTY, ILLINOIS
TDD: S05-9812-007
PAN: 8D0701SIXX

February 24, 1999

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Emergency Response Branch
77 West Jackson Boulevard
Chicago, Illinois, 60604

Prepared by: Paul Atkociunas — Date: 2/24/99
Paul Atkociunas, START Project Manager

Reviewed by: Paul Atkociunas — Date: 2/24/99
for Patrick Zwilling, START Assistant Program Manager

Approved by: Paul Atkociunas — Date: 2/24/99
for Tom Kouris, START Program Manager

ecology and environment, inc.
International Specialists in the Environment
501 W. De Young Center, Building 1, Suite 3
Marion, Illinois 62959
Tel: (618) 998-9237, Fax: (618) 998-1106
recycled paper

Table of Contents

List of Figures

List of Tables

1. Introduction

The United States Environmental Protection Agency (U.S. EPA) tasked the Ecology and Environment, Inc. (E & E), Superfund Technical Assessment and Response Team (START) to assist the U.S. EPA On-Scene Coordinator (OSC) Kevin Turner in performing a site assessment of the Quality Cleaners site, located in Belleville, St. Clair County, Illinois. START was requested under Technical Direction Document (TDD) S05-9812-007 to prepare and implement a health and safety plan; conduct a site reconnaissance; perform air monitoring; collect samples and subcontract analytical services; document on-site activities; and evaluate potential threats to human health and the environment. The site assessment was performed in accordance with the National Contingency Plan (NCP) in the Code of Federal Regulations (CFR) Section 300.415, to evaluate on-site conditions and possible threats to human health, welfare, and the environment. The site assessment was conducted on December 17, 1998.

2. Background

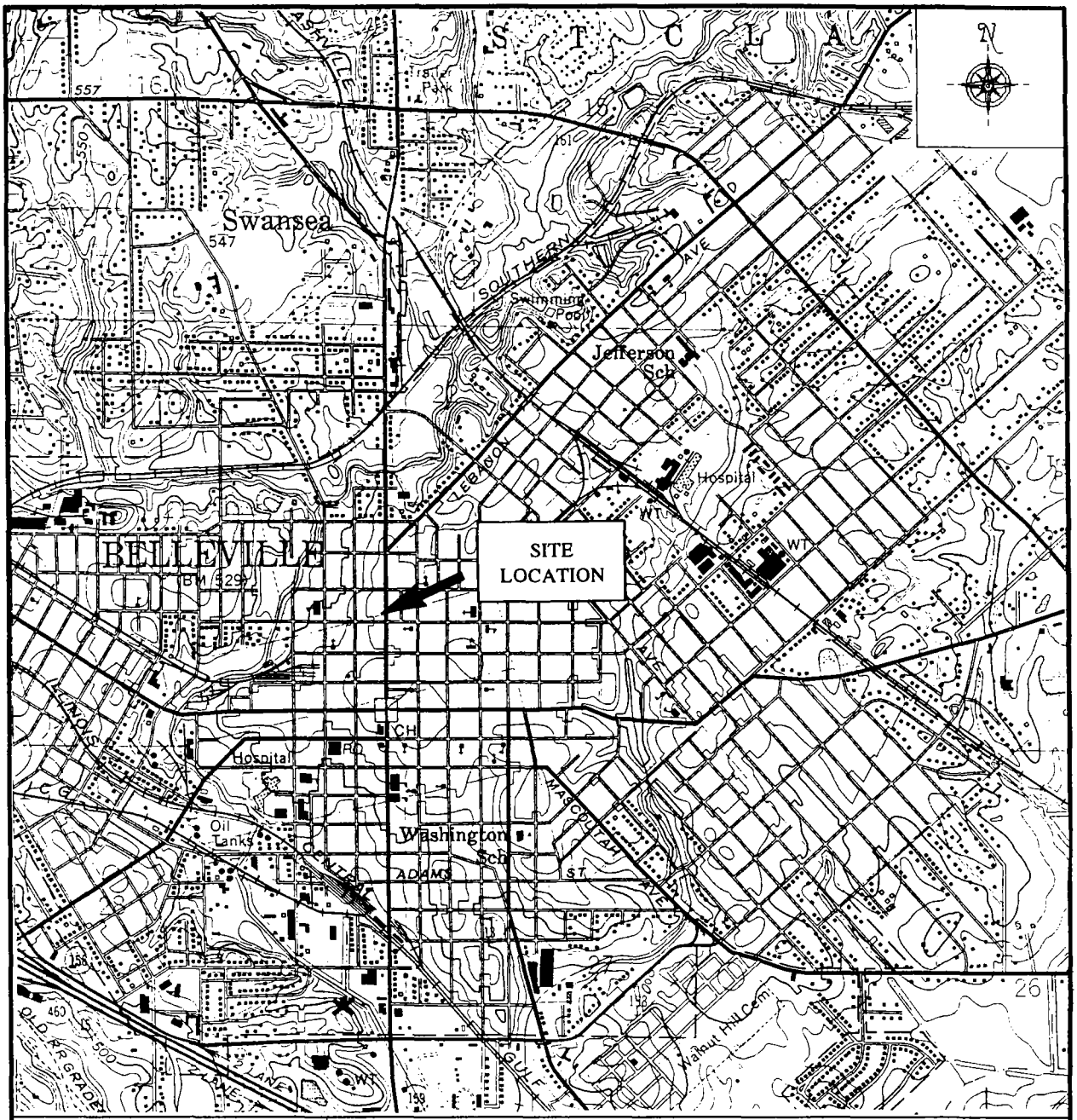
2.1 Site Description

The Quality Cleaners site is a former dry cleaning facility located at 405 North Illinois Street, in Belleville, St. Clair County, Illinois (Figure 2-1). The geographical coordinates for the site are 38°31'03.2" N and 89°59'04.4" W. The site, approximately 0.5 acres in size, is located in a predominantly commercial and residential area and is bounded by Illinois Street on the east, residences to the west, and commercial properties to the north and south. Loop Creek is located approximately 2 miles east of the site. The site consists of one building with two levels. The upper level, which is accessible from entrances on the south side of the building and Illinois Street, contains offices and a storage area. The lower level contains a boiler in the northwest room and dry cleaning equipment in the southwest room, and has access from the west side of the building in the basement. A staircase which permits access to the upper level is located in the center of the building. The east side of the building is at street level and served as the store's entrance. The western side of the building in the rear is two stories, due to the terrain. This portion of the building is U-shaped with an aboveground storage tank (AST), and an underground storage tank (UST) located outside (Figure 2-2). This tank area has a roof over it and is accessible to the public. The AST is approximately 500 gallons in size and labeled "Stoddard Solution". The UST is unknown in size, and is presumed empty based on visual inspection by OSC Turner and START member Fitzgerald. The nearest residence is approximately 100 feet west of the site.

2.2 Site History

Quality Cleaners began operations in February 1948, and ceased operations in September 1996. On December 2, 1998, OSC Kevin Turner, START member Tracey Fitzgerald, Illinois Environmental Protection Agency (IEPA) personnel Bruce Everett and Tom Miller performed a site reconnaissance to assess the hazards on site. All entrances were either locked or boarded over.

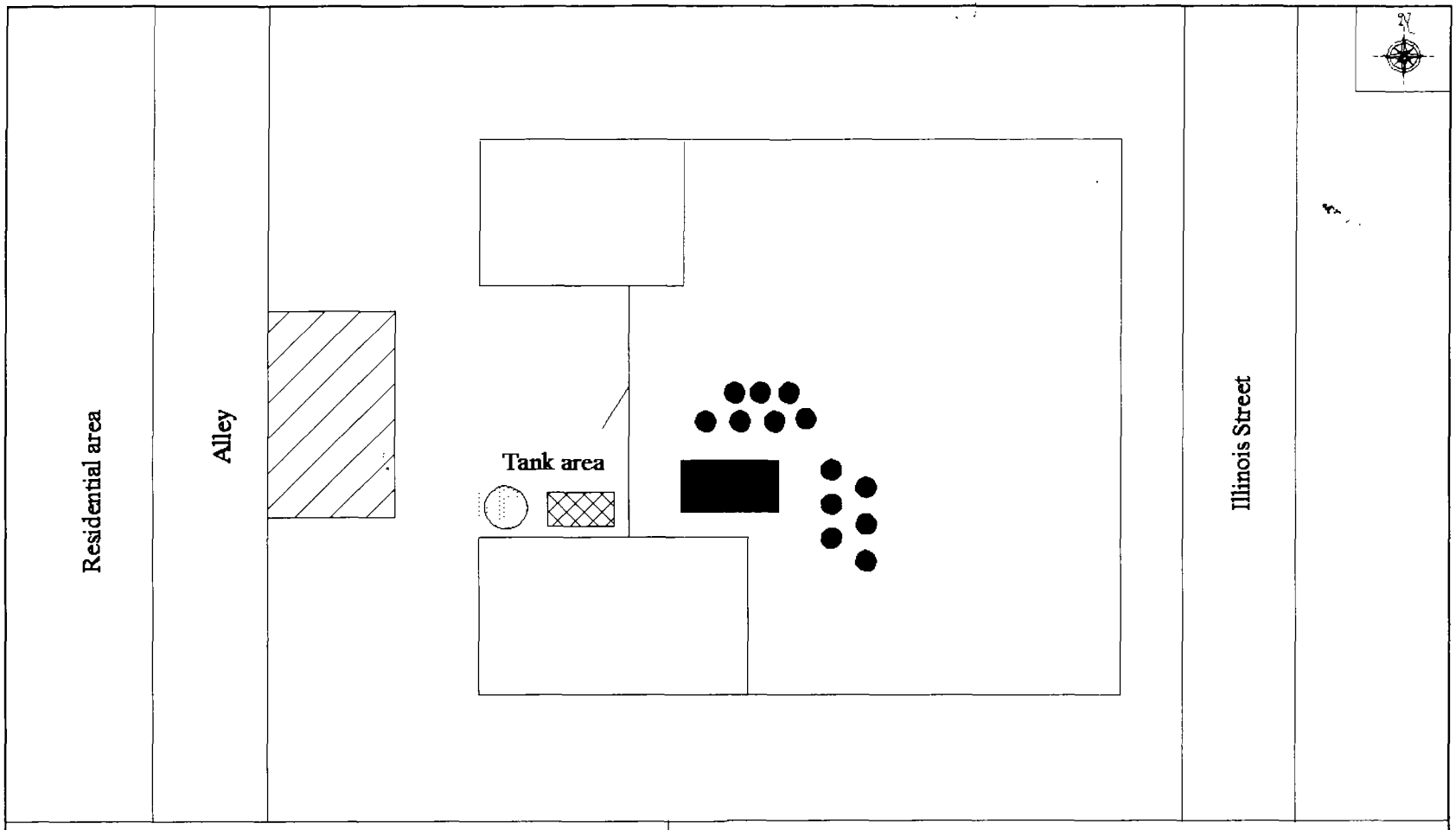
Vandalism has occurred to the site, as evidence of several broken windows on the south side and rear of the building. Three 55-gallon drums, two 15-gallon drums, and one 5-gallon container were located outside at the rear of the building. The 55-gallon drums consisted of the following; two drums labeled "360-Solvent" and one drum that contained an oil and water mixture. The two 15-gallon containers had their tops cut off and appeared to contain an oil, water, and tar mixture. The 5-gallon container appeared to contain roofing tar. The site and former owners are currently under investigation by U.S. EPA.



Quadrangle Location

ecology and environment, Inc.
Superfund Technical Assessment and Response Team
Region 5
501 W. DeYoung Center, Suite 3, Marion, Illinois 62959

TITLE: Site Location Map	FIGURE: 2-1
SITE: Quality Cleaners	SCALE: 1:24,000
CITY: Belleville STATE: Illinois	TDD: S05-9812-007
SOURCE: U.S.G.S. 7.5 Minute Topographic Series, O'Fallon Quadrangle	DATE: 1965
	REVISED: N/A



Legend

- Parking area
- Aboveground storage tank
- Underground storage tank
- Drums
- Miscellaneous containers

ecology and environment, inc.
Superfund Technical Assessment and Response Team
Region 5
501 W. DeYoung Center, Suite 3, Marion, Illinois, 62959

TITLE: Site Features Map	FIGURE: 2-2
SITE: Quality Cleaners	TDD: S05-9812-007
CITY: Belleville STATE: Illinois	SCALE: Not to scale
SOURCE: Ecology and Environment, Inc.	DATE: 02-04-99

3. Site Assessment

On December 17, 1998, OSC Kevin Turner and START members Tracey Fitzgerald and Paul Atkociunas performed a site assessment at the Quality Cleaners site. After a site meeting to discuss on-site safety hazards. U.S. EPA and START began in the upper level of the building to search for records of previous owners and operations. Air monitoring inside the building revealed no organic vapors above background with the photoionization detector (PID). Site photographs are presented in Appendix A, and Appendix B contains a waste inventory list.

START members staged drums for sampling outside at the back of the facility, adjacent to the AST. Four liquid samples were collected, one for each type of material located in drums on site. Drum samples were collected in Level B personal protective equipment with dedicated glass drum thieves. Sample S0-1 was a sample from a 55-gallon steel drum labeled "360 Solvent". PID readings taken at the drum opening revealed 400 parts per million (ppm) of organic vapors. Sample S0-2 was taken from a 15-gallon poly drum labeled "8885 Abstergent". PID readings above the drum were at background levels. Sample S0-3 was taken from a 5-gallon steel drum labeled "Condusol". PID readings taken above the drum were at background levels. Sample S0-4 was taken from a closed top drum located outside the building that is missing a bung. The drum contained a viscous black liquid and rainwater.

The samples were packaged and shipped according to E & E and U.S. EPA protocols to TriMatrix Laboratories, Inc., in Grand Rapids, Michigan, on December 21, 1998, for chemical analysis under analytical TDD S05-9812-805. The samples were analyzed for total Resource Conservation and Recovery Act (RCRA) metals, total volatile organic compounds (VOCs), total semivolatile organic compounds (SVOCs), pH, and flash point.

OSC Turner and START examined the AST and the UST. No material could be removed from the tanks, and are presumed to be empty. The soil around the UST was visibly stained. U.S. EPA and START consolidated all containers found into one area near the rear door (Figure 2-2). The three 55-gallon drums, two 15-gallon drums, and the 5-gallon metal container located outside the

facility were brought inside and staged near the rear door. OSC Turner and START member Fitzgerald boarded the south door, which accesses the upper level, with plywood.

4. Analytical Results

The samples were shipped Federal Express to the TriMatrix Laboratories, Inc., Grand Rapids, Michigan. The samples were analyzed under analytical TDD S05-9812-805. Analytical results indicate that sample S0-1 exhibits RCRA characteristic waste. Sample S0-1 was a sample from a 55-gallon steel drum labeled "360 Solvent". Chemical analysis indicated that the sample had a flash point of 124° Fahrenheit (F), which is below the D001 regulatory limit of 140°F in the 40 CFR 261.21(a)(1).

Chemical analysis of sample S0-4 detected 283 milligram per kilogram (mg/kg) of lead. Chlorinated solvents were detected in samples S0-1, S0-3, and S0-4. Specifically, sample S0-1 contained 11,000 mg/kg of tetrachloroethene, sample S0-3 contained 0.94 mg/kg of methylene chloride and 0.95 mg/kg of tetrachloroethene, and sample S0-4 contained 5.6 mg/kg of methylene chloride. Sample S0-1 also contained 440 mg/kg of toluene, 220 mg/kg of ethylbenzene, and 1,000 mg/kg of xylene. To determine all appropriate RCRA waste classifications for these drums, a toxicity characteristic leaching procedure (TCLP) analysis would be required to be performed.

Analytical results are summarized in Table 4-1. The entire validated data package is included in Appendix C.

Table 4-1

SUMMARY OF ANALYTICAL RESULTS
QUALITY CLEANERS
BELLEVILLE, ST. CLAIR COUNTY, ILLINOIS
DECEMBER 17, 1998

Parameter	Sample Designation/Matrix			
	S0-1/Liquid	S0-2/Liquid	S0-3/Liquid	S0-4/Liquid
pH (standard units)	6.5	6.0	6.5	6.0
Flash point (°F)	124	>200	>200	>200
Metals (mg/kg)				
Lead	2.7J	<2.0	<2.0	283
Volatile Organic Compounds (mg/kg)				
Methylene chloride	<200	<0.50	0.84	6.6
Tetrachloroethene	11,000	<0.50	0.85	<5.0
Toluene	440	<0.50	0.50	<5.0
Ethylbenzene	220	<0.50	<0.50	<5.0
Xylene (Total)	1,000	<1.5	<1.5	<15
Semivolatile Organic Compounds (mg/kg)				
Acenaphthylene	<25	<25	43	27
Anthracene	<25	<25	63	39
Bis (2-ethylhexyl)-phthalate	250	<25	<25	110
Butyl benzyl phthalate	300	<25	<25	<25
Di-n-Octylphthalate	33	<25	<25	<25
Fluoranthene	<25	<25	<25	37
2-Methylnaphthalene	39	<25	54	1,100
Naphthalene	280	<25	<25	290
Phenanthrene	<25	<25	150	61
Pyrene	<25	<25	<25	66

Key:

mg/kg = Milligrams per kilogram.
J = Value is estimated because quality control criteria were not met.

Source: TriMatrix Laboratories, Inc., Grand Rapids, Michigan, analytical TDD S05-9812-805.

5. Discussion of Potential Threats

Conditions present at the Quality Cleaners site that may be used to determine the appropriateness of a removal action as set forth in Section 300.415(b)(2) of the NCP are:

- **Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants.** Analytical results from the liquid sample S0-1 contained tetrachloroethylene at a concentration of 11,000 mg/kg. Analytical results from the liquid sample S0-4, taken from the open drum containing oil and water contained lead at a concentration of 238 mg/kg. Hazardous waste toxicity characteristics based on toxicity characteristic leaching procedure concentrations (TCLP) are provided in 40 CFR section 261.24. A TCLP concentration of 0.7 milligram per liter (mg/L) for tetrachloroethylene and 5.0 mg/L for lead are the limiting concentrations above which a material will be classified as having hazardous characteristics. Since liquids have 100% leaching characteristics, the non-TCLP concentrations of tetrachloroethylene at 11,000 mg/kg and lead at 238 mg/kg encountered in drums samples, pose potential TCLP concentrations on further analysis, that would exceed regulatory limits. The TCLP analysis would be required to be performed to determine the appropriate waste classifications.

- **Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release.** Those hazardous substances described above in drums have a potential for release should further vandalism result in these drums being disturbed. Access to the site is unrestricted and vandalism is evident at the site.

- **Threat of fire or explosion.** Analytical results from the liquid sample S0-1, taken from one of the two drums labeled "360-Solvent", had a flashpoint of 124°F. The flashpoint of sample S0-1 is such that it exhibits the RCRA hazardous waste characteristic of ignitability as defined in 40 CFR 261.21. These drums pose a potential threat of fire or explosion during hot, dry conditions.

6. Conclusion

It is recommended that actions be taken to mitigate potential human health and environmental threats resulting from the presence of abandoned drums at the site that exhibit RCRA ignitability and toxicity characteristics. Due to possible access, and potential for drums to be vandalized, there is a potential for nearby populations to be exposed to hazardous substances. A removal action to mitigate potential threats to human health and the environment by removing and disposing of these hazardous substances is recommended for the Quality Cleaners site.

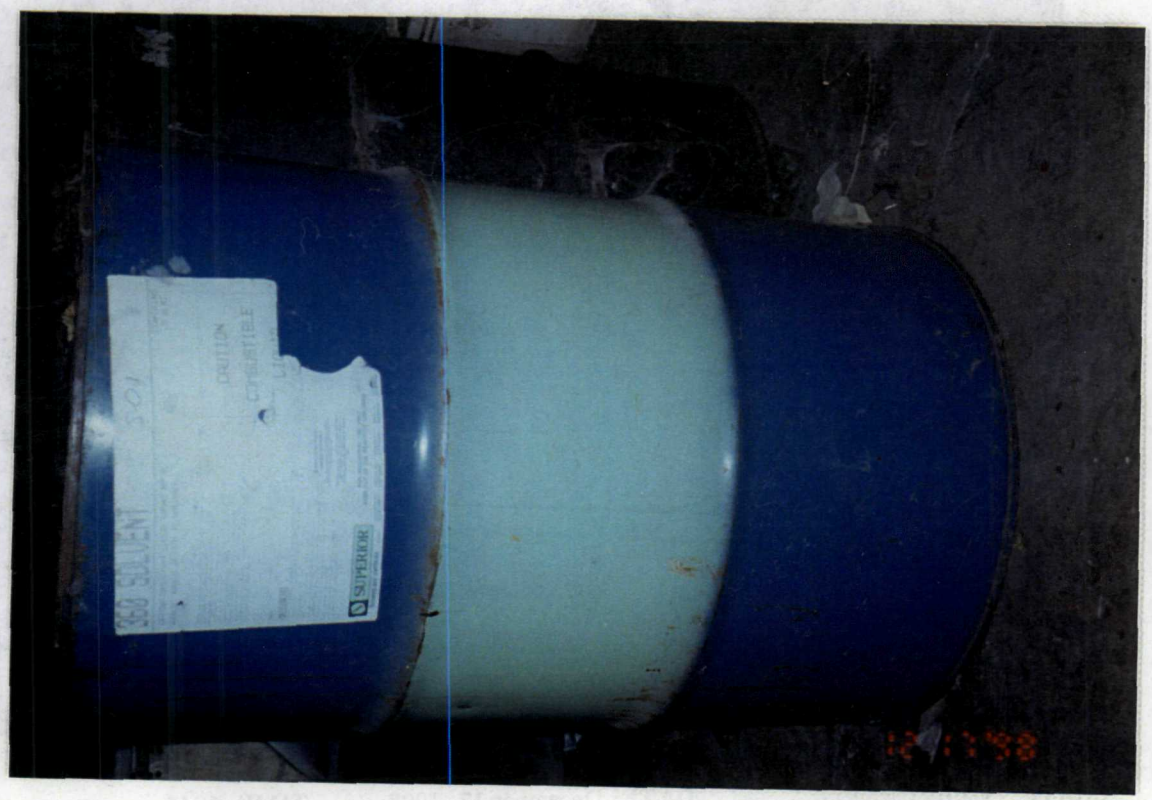
Appendix A

Photodocumentation

SITE: Quality Cleaners **DATE:** December 17, 1998 **TIME:** 1245
LOCATION: Belleville, IL **DIRECTION:** N/A **PHOTOGRAPHER:** P. Atkociunas
SUBJECT: Sample S-04, a 55-gallon drum containing an oil/water mixture.

SITE: Quality Cleaners **DATE:** December 17, 1998 **TIME:** 1245
LOCATION: Belleville, IL **DIRECTION:** N/A **PHOTOGRAPHER:** P. Atkociunas
SUBJECT: Sample S-03, a 5-gallon drum labeled Condusol.

SITE: Quality Cleaners **DATE:** December 17, 1998 **TIME:** 1235
LOCATION: Belleville, IL **DIRECTION:** Southeast **PHOTOGRAPHER:** P. Atkociunas
SUBJECT: The aboveground storage tank, which is labeled Stoddard Solution.



SITE: Quality Cleaners **DATE:** December 17, 1998 **TIME:** 1240
LOCATION: Belleville, IL **DIRECTION:** N/A **PHOTOGRAPHER:** P. Atkociunas
SUBJECT: Sample S-01, a 55-gallon drum labeled 360 Solvent.

SITE: Quality Cleaners **DATE:** December 17, 1998 **TIME:** 1230
LOCATION: Belleville, IL **DIRECTION:** South **PHOTOGRAPHER:** P. Atkociunas
SUBJECT: Underground storage tank area with aboveground storage tank at right.

SITE: Quality Cleaners **DATE:** December 17, 1998 **TIME:** 1230
LOCATION: Belleville, IL **DIRECTION:** South **PHOTOGRAPHER:** P. Atkociunas
SUBJECT: Underground storage tank area, note stained soil and debris.

Appendix B

Waste Inventory List

Table B-1

WASTE INVENTORY LIST
QUALITY CLEANERS
BELLEVILLE, ST. CLAIR COUNTY, ILLINOIS
DECEMEBER 17, 1998

Material	Container	Quantity
360 Solvent	55-Gallon drums	2
8851 Injector Fluid	15-Gallon drums	11
8850 Style Set Sizing	15-Gallon drum	1
Unknown	15-Gallon drums	6
8885 Abstergent	15-Gallon drums	2
Paint and varnish	Gallon and quarts	28
Paints and cleaners	Aerosol cans	17
Freon	Gas cylinder (20 pound)	1
Propane	Cylinders (hand held)	4
Amyl acetate	½-Gallon	1
Oil and water	55-Gallon drum	1
Diatomateous earth	20-Pound bag	1
Unknown	20-Pound gas cylinder	1
Condusol	5-Gallon drum	1

Source: START logbook.

Appendix C

Validated Analytical Data Package

ecology and environment, inc.
International Specialists in the Environment

33 North Dearborn Street
Chicago, Illinois 60602
Tel. 312/578-9243, Fax: 312/578-9345

MEMORANDUM

DATE: February 8, 1999

TO: Tracey E. Fitzgerald, START Project Manager, E & E, Marion, Illinois

FROM: Lisa Graczyk, START Chemist, E & E, Chicago, Illinois

THROUGH: Dave Hendren, START Analytical Services Manager, E & E, Chicago, Illinois

SUBJECT: Data Quality Review for Semivolatile Organic Compounds (SVOCs), Quality Cleaners, Belleville, St. Clair County, Illinois

REFERENCE: Project TDD S05-9812-007 Analytical TDD-S05-9812-805
Project PAN 8D0701SIXX Analytical PAN 8DAE01TAXX

The data quality assurance (QA) review of four waste samples collected from the Quality Cleaners site is complete. The samples were collected on December 17, 1998, by the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E). The samples were submitted to TriMatrix Laboratories, Inc., Grand Rapids, Michigan, for analyses. The laboratory analyses were performed according to United States Environmental Protection Agency (U.S. EPA) Solid Waste 846 Method 8270.

Sample Identification

START Identification	Laboratory Identification
SO-1	213970
SO-2	213971
SO-3	213972
SO-4	213973

Data Qualifications:

I. Sample Holding Time: Acceptable

The samples were collected on December 17, 1998, extracted on December 24, 1998, and analyzed on December 28, 1998. This is within the 14-day holding time limit, from collection to extraction, and 40-day limit from extraction to analysis.

II. Gas Chromatography/Mass Spectrometry (GC/MS) Tuning: Acceptable

GC/MS tuning to meet ion abundance criteria using decaflurotriphenylphosphine (DFTPP) were acceptable and samples were analyzed within 12 hours of DFTPP tuning.

III. Calibrations:

• Initial Calibration: Acceptable

A five-point initial calibration was performed prior to analysis. All target compounds had a relative response factor of at least 0.05. The percent relative standard deviations (%RSDs) between response factors were less than 30% for all detected target compounds.

• Continuing Calibration: Acceptable

The percent differences of the response factors were less than or equal to 25%, as required for detected target compounds.

IV. Blank: Acceptable

A method blank was analyzed with the samples. No target compounds were detected in the blank above the limit of quantitation.

V. Internal Standards: Acceptable

The areas of the internal standards in the samples were within -50% to +100% of the associated calibration check standard. The retention times of the internal standards were within the 30-second control limit.

VI. Compound Identification: Acceptable

The mass spectra and retention times of the detected compounds matched those of the standards.

VII. Overall Assessment of Data for Use: Acceptable

The overall usefulness of the data is based on criteria for QA Level II as outlined in the Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-01 (April 1990), Data Validation Procedures, Section 4.0, BNAs by GC/MS Analysis. Based upon the information provided, the data are acceptable for use.

ecology and environment, inc.
International Specialists in the Environment

33 North Dearborn Street
Chicago, Illinois 60602
Tel. 312/578-9243, Fax: 312/578-9345

MEMORANDUM

DATE: February 8, 1999

TO: Tracey E. Fitzgerald, START Project Manager, E & E, Marion, Illinois

FROM: Lisa Graczyk, START Chemist, E & E, Chicago, Illinois

THROUGH: Dave Hendren, START Analytical Services Manager, E & E, Chicago, Illinois

SUBJECT: Organic Data Quality Review for Volatile Organic Compounds (VOCs), Quality Cleaners, Belleville, St. Clair County, Illinois

REFERENCE: Project TDD S05-9812-007 Analytical TDD S05-9812-805
Project PAN 8D0701SIXX Analytical PAN 8DAE01TAXX

The data quality assurance (QA) review of four waste samples collected from the Quality Cleaners site is complete. The samples were collected on December 17, 1998, by the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E). The samples were submitted to TriMatrix Laboratories, Inc., Grand Rapids, Michigan, for analyses. The laboratory analyses were performed according to United States Environmental Protection Agency (U.S. EPA) Solid Waste 846 Method 8260B.

Sample Identification

START Identification No.	Laboratory Identification No.
SO-1	213970
SO-2	213971
SO-3	213972
SO-4	213973

Data Qualifications:

I. Sample Holding Time: Acceptable

The samples were collected on December 17, 1998, and analyzed on December 30, 1998. This is within the 14-day holding time limit.

II. Gas Chromatography/Mass Spectrometry (GC/MS) Tuning: Acceptable

GC/MS tuning to meet ion abundance criteria using bromofluorobenzene (BFB) were acceptable and samples were analyzed within 12 hours of BFB tuning.

III. Calibrations:

• Initial Calibration: Qualified

A five-point initial calibration was performed prior to analysis. All average response factors were greater than 0.05 except for chloroethane. All non-detects for chloroethane were flagged "R", or rejected, as required. The percent relative standard deviations (%RSDs) between response factors were less than 30% for all target compounds.

• Continuing Calibration: Acceptable

The percent differences of the response factors were less than 25%, as required for detected target compounds.

IV. Blank: Acceptable

A method blank was analyzed with the samples. No target compounds were detected in the blank above the limit of quantitation.

V. Internal Standards: Acceptable

The areas of the internal standards in the samples were within -50% to +100% of the associated calibration check standard. The retention times of the internal standards were within the 30-second control limit.

VI. Compound Identification: Acceptable

The mass spectra and retention times of the detected compounds matched those of the standards.

VII. Additional QC Checks: Acceptable

The recoveries of the surrogates used in the samples and blank were within laboratory-established guidelines.

VIII. Overall Assessment of Data for Use: Acceptable

The overall usefulness of the data is based on criteria for QA Level II as outlined in the Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-01 (April 1990), Data Validation Procedures, Section 5.0, VOAs By GC/MS analysis. Based upon the information provided, the data are acceptable for use with the above stated qualifications.

Data Qualifiers and Definition

R - The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. Any reported value is unusable. Resampling and/or reanalysis is necessary for verification.

ecology and environment, inc.
International Specialists in the Environment

33 North Dearborn Street
Chicago, Illinois 60602
Tel. 312/578-9243, Fax: 312/578-9345

MEMORANDUM

DATE: February 8, 1999

TO: Tracey E. Fitzgerald, START Project Manager, E & E, Marion, Illinois

FROM: Lisa Graczyk, START Chemist, E & E, Chicago, Illinois

THROUGH: Dave Hendren, START Analytical Services Manager, E & E, Chicago, Illinois

SUBJECT: Inorganic Data Quality Review for Resource Conservation and Recovery Act (RCRA) Metals, Quality Cleaners, Belleville, St. Clair County, Illinois

REFERENCE: Project TDD S05-9812-007 Analytical TDD S05-9812-805
Project PAN 8D0701SIXX Analytical PAN 8DAE01TAXX

The data quality assurance (QA) review of four waste samples collected from the Quality Cleaners site is complete. The samples were collected on December 17, 1998, by the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E). The samples were submitted to TriMatrix Laboratories, Inc., Grand Rapids, Michigan, for analyses. The laboratory analyses were performed according to the U.S. EPA solid Waste 846 Methods 7471 for mercury, and 6010 for all other metals.

Sample Identification

START Identification No.	Laboratory Identification No.
SO-1	213970
SO-2	213971
SO-3	213972
SO-4	213973

Data Qualifications:

I. Sample Holding Time: Acceptable

The samples were collected on December 17, 1998, and analyzed on January 5 and 6, 1999. This is within the six month holding time limit (28 days for mercury).

II. Calibration:

- Initial Calibration: Acceptable

  Recoveries for the initial calibration verification were within 90 to 110% (80 to 120% for mercury), as required.

- Continuing Calibration: Acceptable

  All analytes included in the continuing calibration verification standard were within 90 to 110% (80 to 120% for mercury), as required.

III. Blanks: Acceptable

Preparation blanks were analyzed with each analytical batch. No target analytes were detected in the blanks. At least one blank was analyzed for each 20 samples.

IV. Interference Check Samples (ICSs): Acceptable

ICSs were analyzed and recoveries were within 20% of the mean value, as required.

V. Assessment of Data for Use: Acceptable

The overall usefulness of the data is based on criteria for QA Level II as outlined in the Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-01 (April 1990) Data Validation Procedures, Section 3.0, Metallic Inorganic Parameters. Based upon the information provided, the data are acceptable for use.

ecology and environment, inc.
International Specialists in the Environment

33 North Dearborn Street
Chicago, Illinois 60602
Tel. 312/578-9243, Fax: 312/578-9345

MEMORANDUM

DATE: February 8, 1999

TO: Tracey E. Fitzgerald, START Project Manager, E & E, Marion, Illinois

FROM: Lisa Graczyk, START Chemist, E & E, Chicago, Illinois

THROUGH: Dave Hendren, START Analytical Services Manager, E & E, Chicago, Illinois

SUBJECT: Miscellaneous Data Quality Review for pH, and Flash Point, Quality Cleaners, Belleville, St. Clair County, Illinois

REFERENCE: Project TDD S05-9812-007 Analytical TDD S05-9812-805
Project PAN 8D0701SIXX Analytical PAN 8DAE01TAXX

The data quality assurance (QA) review of four waste samples collected from the Quality Cleaners site is complete. The samples were collected on December 17, 1998, by the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E). The samples were submitted to TriMatrix Laboratories, Inc., Grand Rapids, Michigan, for analyses. The laboratory analyses were performed according to United States Environmental Protection Agency (U.S. EPA) Method 9041A for pH, and 1010 for flash point.

Sample Identification

START Identification No.	Laboratory Identification No.
SO-1	213970
SO-2	213971
SO-3	213972
SO-4	213973

Data Qualifications:

I. Sample Holding Time: Acceptable

The samples were collected on December 17, 1998, and analyzed on December 30, 1998 for flash point and December 31, 1998, for flash point. The Office of Solid Waste and Emergency

Response (OSWER) Directive 9360.4-01 (April 1990) and Methods 1010 and 9041A do not provide holding times.

II. Calibrations: Acceptable

The pH meter was calibrated and was checked with an appropriate standard. The closed-cup flash point tester was tested with a standard which flashed at the appropriate temperature.

III. Blanks: Not Applicable

A blank is not analyzed for in either the pH or flash point methods.

III. Assessment of Data for Use: Acceptable

The overall usefulness of the data is based on criteria for QA Level II as outlined in the OSWER Directive 9360.4-01 (April 1990) Data Validation Procedures, Section 9.0, Generic Data Validation Procedures. Based upon the information provided, the data are acceptable for use.

TriMatrix Laboratories, Inc.

VOLATILE ORGANICS - 8260B
TCL COMPOUND LIST

Ecology and Environment
Proj: TDD S05-9812-805

Subm: December 17, 1998 Samples
Sample: SO-1

Submittal Number 34916- 1
Date Sampled: 12/17/98 Time: 12:05
Date Received: 12/22/98 Time: 12:32
Analysis Date: 12/30/98
Lab Sample No: 213970
Batch No: 137851

CAS No.	Compound	Result mg/kg	Data Qualifiers	Quantitation Limit
74-87-3	Chloromethane	<200		200
74-83-9	Bromomethane	<200		200
75-01-4	Vinyl Chloride	<200		200
75-00-3	Chloroethane	<200 R		200
75-09-2	Methylene Chloride	<200		200
67-64-1	Acetone	<10000		10000
75-15-0	Carbon Disulfide	<400		400
75-35-4	1,1-Dichloroethylene	<200		200
75-34-3	1,1-Dichloroethane	<200		200
156-59-2	cis-1,2-Dichloroethene	<200		200
156-60-5	trans-1,2-Dichloroethene	<200		200
67-66-3	Chloroform	<200		200
107-06-2	1,2-Dichloroethane	<200		200
79-01-6	Trichloroethene	<200		200
78-93-3	Methyl Ethyl Ketone	<10000		10000
71-55-6	1,1,1-Trichloroethane	<200		200
56-23-5	Carbon Tetrachloride	<200		200
75-27-4	Dichlorobromomethane	<200		200
79-34-5	1,1,2,2-Tetrachloroethane	<200		200
78-87-5	1,2-Dichloropropane	<200		200
10061-02-6	trans-1,3-Dichloropropene	<200		200
124-48-1	Chlorodibromomethane	<200		200
79-00-5	1,1,2-Trichloroethane	<200		200
71-43-2	Benzene	<200		200
10061-01-5	cis-1,3-Dichloropropene	<200		200
75-25-2	Bromoform	<200		200
591-78-6	2-Hexanone	<10000		10000
108-10-1	4-Methyl-2-Pentanone	<10000		10000
127-18-4	Tetrachloroethene	**11000**		200
108-88-3	Toluene	**440**		200
108-90-7	Chlorobenzene	<200		200
100-41-4	Ethylbenzene	**220**		200
100-42-5	Styrene	<200		200
1330-20-7	Xylene (Total)	**1000**		600

000019

5555 Glenwood Hills Parkway SE • PO Box 888692 • Grand Rapids, MI 49588-8692 • (616) 975-4500 • Fax (616) 942-7463

TriMatrix Laboratories, Inc.

VOLATILE ORGANICS - 8260B
TCL COMPOUND LIST

Ecology and Environment
Proj: TDD S05-9812-805

Subm: December 17, 1998 Samples
Sample: SO-2

Submittal Number 34916- 1
Date Sampled: 12/17/98 Time: 12:15
Date Received: 12/22/98 Time: 12:32
Analysis Date: 12/30/98
Lab Sample No: 213971
Batch No: 137851

CAS No.	Compound	Result mg/kg	Data Qualifiers	Quantitation Limit
74-87-3	Chloromethane	<0.50		0.50
74-83-9	Bromomethane	<0.50		0.50
75-01-4	Vinyl Chloride	<0.50		0.50
75-00-3	Chloroethane	<0.50	R	0.50
75-09-2	Methylene Chloride	<0.50		0.50
67-64-1	Acetone	<25		25
75-15-0	Carbon Disulfide	<1.0		1.0
75-35-4	1,1-Dichloroethylene	<0.50		0.50
75-34-3	1,1-Dichloroethane	<0.50		0.50
156-59-2	cis-1,2-Dichloroethene	<0.50		0.50
156-60-5	trans-1,2-Dichloroethene	<0.50		0.50
67-66-3	Chloroform	<0.50		0.50
107-06-2	1,2-Dichloroethane	<0.50		0.50
79-01-6	Trichloroethene	<0.50		0.50
78-93-3	Methyl Ethyl Ketone	<25		25
71-55-6	1,1,1-Trichloroethane	<0.50		0.50
56-23-5	Carbon Tetrachloride	<0.50		0.50
75-27-4	Dichlorobromomethane	<0.50		0.50
79-34-5	1,1,2,2-Tetrachloroethane	<0.50		0.50
78-87-5	1,2-Dichloropropane	<0.50		0.50
10061-02-6	trans-1,3-Dichloropropene	<0.50		0.50
124-48-1	Chlorodibromomethane	<0.50		0.50
79-00-5	1,1,2-Trichloroethane	<0.50		0.50
71-43-2	Benzene	<0.50		0.50
10061-01-5	cis-1,3-Dichloropropene	<0.50		0.50
75-25-2	Bromoform	<0.50		0.50
591-78-6	2-Hexanone	<25		25
108-10-1	4-Methyl-2-Pentanone	<25		25
127-18-4	Tetrachloroethene	<0.50		0.50
108-88-3	Toluene	<0.50		0.50
108-90-7	Chlorobenzene	<0.50		0.50
100-41-4	Ethylbenzene	<0.50		0.50
100-42-5	Styrene	<0.50		0.50
1330-20-7	Xylene (Total)	<1.5		1.5

300025

5555 Glenwood Hills Parkway SE • PO Box 888692 • Grand Rapids, MI 49588-8692 • (616) 975-4500 • Fax (616) 942-7463

TriMatrix Laboratories, Inc.

VOLATILE ORGANICS - 8260B
TCL COMPOUND LIST

Ecology and Environment
Proj: TDD S05-9812-805

Subm: December 17, 1998 Samples
Sample: SO-3

Submittal Number 34916- 1
Date Sampled: 12/17/98 Time: 12:25
Date Received: 12/22/98 Time: 12:32
Analysis Date: 12/30/98
Lab Sample No: 213972
Batch No: 137851

CAS No.	Compound	Result mg/kg	Data Qualifiers	Quantitation Limit
74-87-3	Chloromethane	<0.50		0.50
74-83-9	Bromomethane	<0.50		0.50
75-01-4	Vinyl Chloride	<0.50		0.50
75-00-3	Chloroethane	<0.50R		0.50
75-09-2	Methylene Chloride	**0.84**		0.50
67-64-1	Acetone	<25		25
75-15-0	Carbon Disulfide	<1.0		1.0
75-35-4	1,1-Dichloroethylene	<0.50		0.50
75-34-3	1,1-Dichloroethane	<0.50		0.50
156-59-2	cis-1,2-Dichloroethene	<0.50		0.50
156-60-5	trans-1,2-Dichloroethene	<0.50		0.50
67-66-3	Chloroform	<0.50		0.50
107-06-2	1,2-Dichloroethane	<0.50		0.50
79-01-6	Trichloroethene	<0.50		0.50
78-93-3	Methyl Ethyl Ketone	<25		25
71-55-6	1,1,1-Trichloroethane	<0.50		0.50
56-23-5	Carbon Tetrachloride	<0.50		0.50
75-27-4	Dichlorobromomethane	<0.50		0.50
79-34-5	1,1,2,2-Tetrachloroethane	<0.50		0.50
78-87-5	1,2-Dichloropropane	<0.50		0.50
10061-02-6	trans-1,3-Dichloropropene	<0.50		0.50
124-48-1	Chlorodibromomethane	<0.50		0.50
79-00-5	1,1,2-Trichloroethane	<0.50		0.50
71-43-2	Benzene	<0.50		0.50
10061-01-5	cis-1,3-Dichloropropene	<0.50		0.50
75-25-2	Bromoform	<0.50		0.50
591-78-6	2-Hexanone	<25		25
108-10-1	4-Methyl-2-Pentanone	<25		25
127-18-4	Tetrachloroethene	**0.85**		0.50
108-88-3	Toluene	**0.50**		0.50
108-90-7	Chlorobenzene	<0.50		0.50
100-41-4	Ethylbenzene	<0.50		0.50
100-42-5	Styrene	<0.50		0.50
1330-20-7	Xylene (Total)	<1.5		1.5

300028

5555 Glenwood Hills Parkway SE • PO Box 888692 • Grand Rapids, MI 49588-8692 • (616) 975-4500 • Fax (616) 942-7463

TriMatrix
Laboratories. Inc.

VOLATILE ORGANICS - 8260B
TCL COMPOUND LIST

Ecology and Environment
Proj: TDD S05-9812-805

Subm: December 17, 1998 Samples
Sample: SO-4

Submittal Number 34916- 1
Date Sampled: 12/17/98 Time: 12:50
Date Received: 12/22/98 Time: 12:32
Analysis Date: 12/30/98
Lab Sample No: 213973
Batch No: 137851

CAS No.	Compound	Result mg/kg	Data Qualifiers	Quantitation Limit
74-87-3	Chloromethane	<5.0		5.0
74-83-9	Bromomethane	<5.0		5.0
75-01-4	Vinyl Chloride	<5.0		5.0
75-00-3	Chloroethane	<5.0 R		5.0
75-09-2	Methylene Chloride	**6.6**		5.0
67-64-1	Acetone	<250		250
75-15-0	Carbon Disulfide	<10		10
75-35-4	1,1-Dichloroethylene	<5.0		5.0
75-34-3	1,1-Dichloroethane	<5.0		5.0
156-59-2	cis-1,2-Dichloroethene	<5.0		5.0
156-60-5	trans-1,2-Dichloroethene	<5.0		5.0
67-66-3	Chloroform	<5.0		5.0
107-06-2	1,2-Dichloroethane	<5.0		5.0
79-01-6	Trichloroethene	<5.0		5.0
78-93-3	Methyl Ethyl Ketone	<250		250
71-55-6	1,1,1-Trichloroethane	<5.0		5.0
56-23-5	Carbon Tetrachloride	<5.0		5.0
75-27-4	Dichlorobromomethane	<5.0		5.0
79-34-5	1,1,2,2-Tetrachloroethane	<5.0		5.0
78-87-5	1,2-Dichloropropane	<5.0		5.0
10061-02-6	trans-1,3-Dichloropropene	<5.0		5.0
124-48-1	Chlorodibromomethane	<5.0		5.0
79-00-5	1,1,2-Trichloroethane	<5.0		5.0
71-43-2	Benzene	<5.0		5.0
10061-01-5	cis-1,3-Dichloropropene	<5.0		5.0
75-25-2	Bromoform	<5.0		5.0
591-78-6	2-Hexanone	<250		250
108-10-1	4-Methyl-2-Pentanone	<250		250
127-18-4	Tetrachloroethene	<5.0		5.0
108-88-3	Toluene	<5.0		5.0
108-90-7	Chlorobenzene	<5.0		5.0
100-41-4	Ethylbenzene	<5.0		5.0
100-42-5	Styrene	<5.0		5.0
1330-20-7	Xylene (Total)	<15		15

000033

5555 Glenwood Hills Parkway SE • PO Box 888692 • Grand Rapids, MI 49588-8692 • (616) 975-4500 • Fax (616) 942-7463

TriMatrix
Laboratories, Inc.

SEMI-VOLATILE ORGANICS
USEPA-8270 B/N/A SCAN

Ecology and Environment
Proj: TDD S05-9812-805

Subm: December 17, 1998 Samples
Sample: SO-1

Submittal Number 34916- 1
Date Sampled: 12/17/98 Time: 12:05
Date Received: 12/22/98 Time: 12:32
Analysis Date: 12/28/98
Lab Sample No: 213970
Batch No: 137738

CAS No.	Compound	Result mg/kg	Data Qualifiers	Quantitation Limit
83-32-9	Acenaphthene	<25		25
208-96-8	Acenaphthylene	<25		25
120-12-7	Anthracene	<25		25
56-55-3	Benzo (a) Anthracene	<25		25
50-32-8	Benzo (a) Pyrene	<25		25
56832-73-6	Benzo (b&k) Fluoranthene	<25		25
191-24-2	Benzo (g,h,i,) Perylene	<25		25
65-85-0	Benzoic Acid	<500		500
100-51-6	Benzyl Alcohol	<500		500
111-91-1	Bis (2-Chloroethoxy)-Methane	<25		25
92-49-9	Bis (2-Chloroethyl) Ether	<25		25
108-60-1	Bis (2-Chloroisopropyl)-Ether	<25		25
117-81-7	Bis (2-ethylhexyl)-Phthalate	**250**		25
101-55-3	4-Bromophenyl Phenylether	<25		25
85-68-7	Butyl Benzyl Phthalate	**300**		25
59-50-7	4-Chloro-3-Methylphenol	<25		25
106-47-8	4-Chloroaniline	<25		25
91-58-7	2-Chloronaphthalene	<25		25
95-57-8	2-Chlorophenol	<25		25
7005-72-3	4-Chlorophenylphenyl-Ether	<25		25
591-78-6	Chrysene	<25		25
84-74-2	Di-n-Butylphthalate	<25		25
117-84-0	Di-n-Octylphthalate	**33**		25
53-70-3	Dibenzo (a,h) Anthracene	<25		25
132-64-9	Dibenzofuran	<25		25
95-50-1	1,2-Dichlorobenzene	<25		25
541-73-1	1,3-Dichlorobenzene	<25		25
106-46-7	1,4-Dichlorobenzene	<25		25
91-94-1	3,3'-Dichlorobenzidine	<25		25
120-83-2	2,4-Dichlorophenol	<25		25
84-66-2	Diethylphthalate	<25		25

000100

5555 Glenwood Hills Parkway SE • PO Box 888692 • Grand Rapids, MI 49588-8692 • (616) 975-4500 • Fax (616) 942-7463

TriMatrix Laboratories, Inc.

SEMI-VOLATILE ORGANICS
USEPA-8270 B/N/A SCAN

Ecology and Environment
Proj: TDD S05-9812-805

Subm: December 17, 1998 Samples
Sample: SO-1

Submittal Number 34916- 1
Date Sampled: 12/17/98 Time: 12:05
Date Received: 12/22/98 Time: 12:32
Analysis Date: 12/28/98
Lab Sample No: 213970
Batch No: 137738

CAS No.	Compound	Result mg/kg	Data Qualifiers	Quantitation Limit
131-11-3	Dimethylphthalate	<25		25
105-67-9	2,4-Dimethylphenol	<25		25
534-52-1	4,6-Dinitro-2-Methylphenol	<200		200
51-28-5	2,4-Dinitrophenol	<200		200
121-14-2	2,4-Dinitrotoluene	<25		25
606-20-2	2,6-Dinitrotoluene	<25		25
206-44-0	Fluoranthene	<25		25
86-73-7	Fluorene	<25		25
118-74-1	Hexachlorobenzene	<25		25
87-68-3	Hexachlorobutadiene	<25		25
77-47-4	Hexachlorocyclopentadiene	<25		25
67-72-1	Hexachloroethane	<25		25
193-39-5	Indeno (1,2,3-cd) Pyrene	<25		25
78-59-1	Isophorone	<25		25
91-57-6	2-Methylnaphthalene	**39**		25
95-48-7	2-Methylphenol	<25		25
106-44-5	4-Methylphenol	<25		25
621-64-7	N-Nitrosodi-n-Propylamine	<25		25
156-10-5	N-Nitroso-di-Phenylamine	<25		25
91-20-3	Naphthalene	**280**		25
88-74-4	2-Nitroaniline	<25		25
99-09-2	3-Nitroaniline	<25		25
100-01-6	4-Nitroaniline	<25		25
98-95-3	Nitrobenzene	<25		25
88-75-5	2-Nitrophenol	<25		25
100-02-7	4-Nitrophenol	<200		200
87-86-5	Pentachlorophenol	<25		25
85-01-8	Phenanthrene	<25		25
108-95-2	Phenol	<25		25
129-00-0	Pyrene	<25		25
120-82-1	1,2,4-Trichlorobenzene	<25		25
95-95-4	2,4,5-Trichlorophenol	<25		25
88-06-2	2,4,6-Trichlorophenol	<25		25

300101

5555 Glenwood Hills Parkway SE • PO Box 888692 • Grand Rapids, MI 49588-8692 • (616) 975-4500 • Fax (616) 942-7463

TriMatrix Laboratories, Inc.

SEMI-VOLATILE ORGANICS
USEPA-8270 B/N/A SCAN

Ecology and Environment
Proj: TDD S05-9812-805

Subm: December 17, 1998 Samples
Sample: SO-2

Submittal Number 34916- 1
Date Sampled: 12/17/98 Time: 12:15
Date Received: 12/22/98 Time: 12:32
Analysis Date: 12/28/98
Lab Sample No: 213971
Batch No: 137738

CAS No.	Compound	Result mg/kg	Data Qualifiers	Quantitation Limit
83-32-9	Acenaphthene	<25		25
208-96-8	Acenaphthylene	<25		25
120-12-7	Anthracene	<25		25
56-55-3	Benzo (a) Anthracene	<25		25
50-32-8	Benzo (a) Pyrene	<25		25
56832-73-6	Benzo (b&k) Fluoranthene	<25		25
191-24-2	Benzo (g,h,i,) Perylene	<25		25
65-85-0	Benzoic Acid	<500		500
100-51-6	Benzyl Alcohol	<500		500
111-91-1	Bis (2-Chloroethoxy)-Methane	<25		25
92-49-9	Bis (2-Chloroethyl) Ether	<25		25
108-60-1	Bis (2-Chloroisopropyl)-Ether	<25		25
117-81-7	Bis (2-ethylhexyl)-Phthalate	<25		25
101-55-3	4-Bromophenyl Phenylether	<25		25
85-68-7	Butyl Benzyl Phthalate	<25		25
59-50-7	4-Chloro-3-Methylphenol	<25		25
106-47-8	4-Chloroaniline	<25		25
91-58-7	2-Chloronaphthalene	<25		25
95-57-8	2-Chlorophenol	<25		25
7005-72-3	4-Chlorophenylphenyl-Ether	<25		25
591-78-6	Chrysene	<25		25
84-74-2	Di-n-Butylphthalate	<25		25
117-84-0	Di-n-Octylphthalate	<25		25
53-70-3	Dibenzo (a,h) Anthracene	<25		25
132-64-9	Dibenzofuran	<25		25
95-50-1	1,2-Dichlorobenzene	<25		25
541-73-1	1,3-Dichlorobenzene	<25		25
106-46-7	1,4-Dichlorobenzene	<25		25
91-94-1	3,3'-Dichlorobenzidine	<25		25
120-83-2	2,4-Dichlorophenol	<25		25
84-66-2	Diethylphthalate	<25		25

380111

5555 Glenwood Hills Parkway SE • PO Box 888692 • Grand Rapids, MI 49588-8692 • (616) 975-4500 • Fax (616) 942-7463

TriMatrix Laboratories, Inc.

SEMI-VOLATILE ORGANICS
USEPA-8270 B/N/A SCAN

Ecology and Environment
Proj: TDD S05-9812-805

Subm: December 17, 1998 Samples
Sample: SO-2

Submittal Number 34916- 1
Date Sampled: 12/17/98 Time: 12:15
Date Received: 12/22/98 Time: 12:32
Analysis Date: 12/28/98
Lab Sample No: 213971
Batch No: 137738

CAS No.	Compound	Result mg/kg	Data Qualifiers	Quantitation Limit
131-11-3	Dimethylphthalate	<25		25
105-67-9	2,4-Dimethylphenol	<25		25
534-52-1	4,6-Dinitro-2-Methylphenol	<200		200
51-28-5	2,4-Dinitrophenol	<200		200
121-14-2	2,4-Dinitrotoluene	<25		25
606-20-2	2,6-Dinitrotoluene	<25		25
206-44-0	Fluoranthene	<25		25
86-73-7	Fluorene	<25		25
118-74-1	Hexachlorobenzene	<25		25
87-68-3	Hexachlorobutadiene	<25		25
77-47-4	Hexachlorocyclopentadiene	<25		25
67-72-1	Hexachloroethane	<25		25
193-39-5	Indeno (1,2,3-cd) Pyrene	<25		25
78-59-1	Isophorone	<25		25
91-57-6	2-Methylnaphthalene	<25		25
95-48-7	2-Methylphenol	<25		25
106-44-5	4-Methylphenol	<25		25
621-64-7	N-Nitrosodi-n-Propylamine	<25		25
156-10-5	N-Nitroso-di-Phenylamine	<25		25
91-20-3	Naphthalene	<25		25
88-74-4	2-Nitroaniline	<25		25
99-09-2	3-Nitroaniline	<25		25
100-01-6	4-Nitroaniline	<25		25
98-95-3	Nitrobenzene	<25		25
88-75-5	2-Nitrophenol	<25		25
100-02-7	4-Nitrophenol	<200		200
87-86-5	Pentachlorophenol	<25		25
85-01-8	Phenanthrene	<25		25
108-95-2	Phenol	<25		25
129-00-0	Pyrene	<25		25
120-82-1	1,2,4-Trichlorobenzene	<25		25
95-95-4	2,4,5-Trichlorophenol	<25		25
88-06-2	2,4,6-Trichlorophenol	<25		25

390112

5555 Glenwood Hills Parkway SE • PO Box 888692 • Grand Rapids, MI 49588-8692 • (616) 975-4500 • Fax (616) 942-7463

TriMatrix Laboratories, Inc.

SEMI-VOLATILE ORGANICS
USEPA-8270 B/N/A SCAN

Ecology and Environment
Proj: TDD S05-9812-805

Subm: December 17, 1998 Samples
Sample: SO-3

Submittal Number 34916- 1
Date Sampled: 12/17/98 Time: 12:25
Date Received: 12/22/98 Time: 12:32
Analysis Date: 12/28/98
Lab Sample No: 213972
Batch No: 137738

CAS No.	Compound	Result mg/kg	Data Qualifiers	Quantitation Limit
83-32-9	Acenaphthene	<25		25
208-96-8	Acenaphthylene	**43**		25
120-12-7	Anthracene	**63**		25
56-55-3	Benzo (a) Anthracene	<25		25
50-32-8	Benzo (a) Pyrene	<25		25
56832-73-6	Benzo (b&k) Fluoranthene	<25		25
191-24-2	Benzo (g,h,i,) Perylene	<25		25
65-85-0	Benzoic Acid	<500		500
100-51-6	Benzyl Alcohol	<500		500
111-91-1	Bis (2-Chloroethoxy)-Methane	<25		25
92-49-9	Bis (2-Chloroethyl) Ether	<25		25
108-60-1	Bis (2-Chloroisopropyl)-Ether	<25		25
117-81-7	Bis (2-ethylhexyl)-Phthalate	<25		25
101-55-3	4-Bromophenyl Phenylether	<25		25
85-68-7	Butyl Benzyl Phthalate	<25		25
59-50-7	4-Chloro-3-Methylphenol	<25		25
106-47-8	4-Chloroaniline	<25		25
91-58-7	2-Chloronaphthalene	<25		25
95-57-8	2-Chlorophenol	<25		25
7005-72-3	4-Chlorophenylphenyl-Ether	<25		25
591-78-6	Chrysene	<25		25
84-74-2	Di-n-Butylphthalate	<25		25
117-84-0	Di-n-Octylphthalate	<25		25
53-70-3	Dibenzo (a,h) Anthracene	<25		25
132-64-9	Dibenzofuran	<25		25
95-50-1	1,2-Dichlorobenzene	<25		25
541-73-1	1,3-Dichlorobenzene	<25		25
106-46-7	1,4-Dichlorobenzene	<25		25
91-94-1	3,3'-Dichlorobenzidine	<25		25
120-83-2	2,4-Dichlorophenol	<25		25
84-66-2	Diethylphthalate	<25		25

5555 Glenwood Hills Parkway SE • PO Box 888692 • Grand Rapids, MI 49588-8692 • (616) 975-4500 • Fax (616) 942-7463

TriMatrix Laboratories, Inc.

SEMI-VOLATILE ORGANICS
USEPA-8270 B/N/A SCAN

Ecology and Environment
Proj: TDD S05-9812-805

Subm: December 17, 1998 Samples
Sample: SO-3

Submittal Number 34916- 1
Date Sampled: 12/17/98 Time: 12:25
Date Received: 12/22/98 Time: 12:32
Analysis Date: 12/28/98
Lab Sample No: 213972
Batch No: 137738

CAS No.	Compound	Result mg/kg	Data Qualifiers	Quantitation Limit
131-11-3	Dimethylphthalate	<25		25
105-67-9	2,4-Dimethylphenol	<25		25
534-52-1	4,6-Dinitro-2-Methylphenol	<200		200
51-28-5	2,4-Dinitrophenol	<200		200
121-14-2	2,4-Dinitrotoluene	<25		25
606-20-2	2,6-Dinitrotoluene	<25		25
206-44-0	Fluoranthene	<25		25
86-73-7	Fluorene	<25		25
118-74-1	Hexachlorobenzene	<25		25
87-68-3	Hexachlorobutadiene	<25		25
77-47-4	Hexachlorocyclopentadiene	<25		25
67-72-1	Hexachloroethane	<25		25
193-39-5	Indeno (1,2,3-cd) Pyrene	<25		25
78-59-1	Isophorone	<25		25
91-57-6	2-Methylnaphthalene	**54**		25
95-48-7	2-Methylphenol	<25		25
106-44-5	4-Methylphenol	<25		25
621-64-7	N-Nitrosodi-n-Propylamine	<25		25
156-10-5	N-Nitroso-di-Phenylamine	<25		25
91-20-3	Naphthalene	<25		25
88-74-4	2-Nitroaniline	<25		25
99-09-2	3-Nitroaniline	<25		25
100-01-6	4-Nitroaniline	<25		25
98-95-3	Nitrobenzene	<25		25
88-75-5	2-Nitrophenol	<25		25
100-02-7	4-Nitrophenol	<200		200
87-86-5	Pentachlorophenol	<25		25
85-01-8	Phenanthrene	**150**		25
108-95-2	Phenol	<25		25
129-00-0	Pyrene	<25		25
120-82-1	1,2,4-Trichlorobenzene	<25		25
95-95-4	2,4,5-Trichlorophenol	<25		25
88-06-2	2,4,6-Trichlorophenol	<25		25

000118

5555 Glenwood Hills Parkway SE • PO Box 888692 • Grand Rapids, MI 49588-8692 • (616) 975-4500 • Fax (616) 942-7463

TriMatrix
Laboratories, Inc.

SEMI-VOLATILE ORGANICS
USEPA-8270 B/N/A SCAN

Ecology and Environment
Proj: TDD S05-9812-805

Subm: December 17, 1998 Samples
Sample: SO-4

Submittal Number 34916- 1
Date Sampled: 12/17/98 Time: 12:50
Date Received: 12/22/98 Time: 12:32
Analysis Date: 12/28/98
Lab Sample No: 213973
Batch No: 137738

CAS No.	Compound	Result mg/kg	Data Qualifiers	Quantitation Limit
83-32-9	Acenaphthene	<25		25
208-96-8	Acenaphthylene	**27**		25
120-12-7	Anthracene	**39**		25
56-55-3	Benzo (a) Anthracene	<25		25
50-32-8	Benzo (a) Pyrene	<25		25
56832-73-6	Benzo (b&k) Fluoranthene	<25		25
191-24-2	Benzo (g,h,i,) Perylene	<25		25
65-85-0	Benzoic Acid	<500		500
100-51-6	Benzyl Alcohol	<500		500
111-91-1	Bis (2-Chloroethoxy)-Methane	<25		25
92-49-9	Bis (2-Chloroethyl) Ether	<25		25
108-60-1	Bis (2-Chloroisopropyl)-Ether	<25		25
117-81-7	Bis (2-ethylhexyl)-Phthalate	**110**		25
101-55-3	4-Bromophenyl Phenylether	<25		25
85-68-7	Butyl Benzyl Phthalate	<25		25
59-50-7	4-Chloro-3-Methylphenol	<25		25
106-47-8	4-Chloroaniline	<25		25
91-58-7	2-Chloronaphthalene	<25		25
95-57-8	2-Chlorophenol	<25		25
7005-72-3	4-Chlorophenylphenyl-Ether	<25		25
591-78-6	Chrysene	<25		25
84-74-2	Di-n-Butylphthalate	<25		25
117-84-0	Di-n-Octylphthalate	<25		25
53-70-3	Dibenzo (a,h) Anthracene	<25		25
132-64-9	Dibenzofuran	<25		25
95-50-1	1,2-Dichlorobenzene	<25		25
541-73-1	1,3-Dichlorobenzene	<25		25
106-46-7	1,4-Dichlorobenzene	<25		25
91-94-1	3,3'-Dichlorobenzidine	<25		25
120-83-2	2,4-Dichlorophenol	<25		25
84-66-2	Diethylphthalate	<25		25

000127

5555 Glenwood Hills Parkway SE • PO Box 888692 • Grand Rapids, MI 49588-8692 • (616) 975-4500 • Fax (616) 942-7463

TriMatrix
Laboratories, Inc.

SEMI-VOLATILE ORGANICS
USEPA-8270 B/N/A SCAN

Ecology and Environment
Proj: TDD S05-9812-805

Subm: December 17, 1998 Samples
Sample: SO-4

Submittal Number 34916- 1
Date Sampled: 12/17/98 Time: 12:50
Date Received: 12/22/98 Time: 12:32
Analysis Date: 12/28/98
Lab Sample No: 213973
Batch No: 137738

CAS No.	Compound	Result mg/kg	Data Qualifiers	Quantitation Limit
131-11-3	Dimethylphthalate	<25		25
105-67-9	2,4-Dimethylphenol	<25		25
534-52-1	4,6-Dinitro-2-Methylphenol	<200		200
51-28-5	2,4-Dinitrophenol	<200		200
121-14-2	2,4-Dinitrotoluene	<25		25
606-20-2	2,6-Dinitrotoluene	<25		25
206-44-0	Fluoranthene	**37**		25
86-73-7	Fluorene	<25		25
118-74-1	Hexachlorobenzene	<25		25
87-68-3	Hexachlorobutadiene	<25		25
77-47-4	Hexachlorocyclopentadiene	<25		25
67-72-1	Hexachloroethane	<25		25
193-39-5	Indeno (1,2,3-cd) Pyrene	<25		25
78-59-1	Isophorone	<25		25
91-57-6	2-Methylnaphthalene	**1100**		25
95-48-7	2-Methylphenol	<25		25
106-44-5	4-Methylphenol	<25		25
621-64-7	N-Nitrosodi-n-Propylamine	<25		25
156-10-5	N-Nitroso-di-Phenylamine	<25		25
91-20-3	Naphthalene	**290**		25
88-74-4	2-Nitroaniline	<25		25
99-09-2	3-Nitroaniline	<25		25
100-01-6	4-Nitroaniline	<25		25
98-95-3	Nitrobenzene	<25		25
88-75-5	2-Nitrophenol	<25		25
100-02-7	4-Nitrophenol	<200		200
87-86-5	Pentachlorophenol	<25		25
85-01-8	Phenanthrene	**61**		25
108-95-2	Phenol	<25		25
129-00-0	Pyrene	**66**		25
120-82-1	1,2,4-Trichlorobenzene	<25		25
95-95-4	2,4,5-Trichlorophenol	<25		25
88-06-2	2,4,6-Trichlorophenol	<25		25

5555 Glenwood Hills Parkway SE • PO Box 888692 • Grand Rapids, MI 49588-8692 • (616) 975-4500 • Fax (616) 942-7463

TriMatrix
Laboratories, Inc.

ANALYTICAL REPORT
USEPA CLP FORM 1

Ecology and Environment
Proj: TDD S05-9812-805

Subm: December 17, 1998 Samples

Submittal Number: 34916- 1
Location:
Contact: Jennifer L. Rice
Phone: (616) 975-4500

CAS No.		SO-1	Data Qualifiers C	Q	M	Units
	Lab Sample No:	213970				
7440-38-2	Arsenic, Total	<10			P	mg/kg
7440-39-3	Barium, Total	<1.0			P	mg/kg
7440-43-9	Cadmium, Total	<0.50			P	mg/kg
7440-47-3	Chromium, Total	<4.0			P	mg/kg
7439-92-1	Lead, Total	* 2.7		J	P	mg/kg
7439-97-6	Mercury, Total	*<0.10		J	CV	mg/kg
7782-49-2	Selenium, Total	<10			P	mg/kg
7440-22-4	Silver, Total	<0.25			P	mg/kg
E-10139	pH	6.5				pH Units
E-1003	Flash point, cl-cup	124				deg. F

Sampled by: T.F.
Date Sampled: 12/17/98
Time Sampled: 12:05
Date Received: 12/22/98
Time Received: 12:32

* See attached Statement of Data Qualifications.

080238

5555 Glenwood Hills Parkway SE • PO Box 888692 • Grand Rapids, MI 49588-8692 • (616) 975-4500 • Fax (616) 942-7463

TriMatrix
Laboratories, Inc.

ANALYTICAL REPORT
USEPA CLP FORM 1

Ecology and Environment
Proj: TDD S05-9812-805

Subm: December 17, 1998 Samples

Submittal Number: 34916- 1
Location:
Contact: Jennifer L. Rice
Phone: (616) 975-4500

CAS No.		SO-2	Data Qualifiers C	Q	M	Units
	Lab Sample No:	213971				
7440-38-2	Arsenic, Total	<10			P	mg/kg
7440-39-3	Barium, Total	<1.0			P	mg/kg
7440-43-9	Cadmium, Total	<0.50			P	mg/kg
7440-47-3	Chromium, Total	<4.0			P	mg/kg
7439-92-1	Lead, Total	<2.0			P	mg/kg
7439-97-6	Mercury, Total	<0.10			CV	mg/kg
7782-49-2	Selenium, Total	<10			P	mg/kg
7440-22-4	Silver, Total	<0.25			P	mg/kg
E-10139	pH	6.0				pH Units
E-1003	Flash point, cl-cup	>200				deg. F
Sampled by:		T.F.				
Date Sampled:		12/17/98				
Time Sampled:		12:15				
Date Received:		12/22/98				
Time Received:		12:32				

5555 Glenwood Hills Parkway SE • PO Box 888692 • Grand Rapids, MI 49588-8692 • (616) 975-4500 • Fax (616) 942-7463

TriMatrix
Laboratories, Inc.

ANALYTICAL REPORT
USEPA CLP FORM 1

Ecology and Environment
Proj: TDD S05-9812-805

Subm: December 17, 1998 Samples

Submittal Number: 34916- 1
Location:
Contact: Jennifer L. Rice
Phone: (616) 975-4500

CAS No.		SO-3	Data Qualifiers C	Q	M	Units
	Lab Sample No:	213972				
7440-38-2	Arsenic, Total	<10			P	mg/kg
7440-39-3	Barium, Total	<1.0			P	mg/kg
7440-43-9	Cadmium, Total	<0.50			P	mg/kg
7440-47-3	Chromium, Total	<4.0			P	mg/kg
7439-92-1	Lead, Total	<2.0			P	mg/kg
7439-97-6	Mercury, Total	<0.10			CV	mg/kg
7782-49-2	Selenium, Total	<10			P	mg/kg
7440-22-4	Silver, Total	<0.25			P	mg/kg
E-10139	pH	6.5				pH Units
E-1003	Flash point, cl-cup	>200				deg. F

Sampled by:	T.F.
Date Sampled:	12/17/98
Time Sampled:	12:25
Date Received:	12/22/98
Time Received:	12:32

30240

5555 Glenwood Hills Parkway SE • PO Box 888692 • Grand Rapids, MI 49588-8692 • (616) 975-4500 • Fax (616) 942-7463

TriMatrix
Laboratories, Inc.

ANALYTICAL REPORT
USEPA CLP FORM 1

Ecology and Environment
Proj: TDD S05-9812-805

Subm: December 17, 1998 Samples

Submittal Number: 34916- 1
Location:
Contact: Jennifer L. Rice
Phone: (616) 975-4500

CAS No.		SO-4	Data Qualifiers C	Q	M	Units
	Lab Sample No:	213973				
7440-38-2	Arsenic, Total	<10			P	mg/kg
7440-39-3	Barium, Total	<1.0			P	mg/kg
7440-43-9	Cadmium, Total	<0.50			P	mg/kg
7440-47-3	Chromium, Total	<4.0			P	mg/kg
7439-92-1	Lead, Total	283			P	mg/kg
7439-97-6	Mercury, Total	<0.10			CV	mg/kg
7782-49-2	Selenium, Total	<10			P	mg/kg
7440-22-4	Silver, Total	<0.25			P	mg/kg
E-10139	pH	6.0				pH Units
E-1003	Flash point, cl-cup	>200				deg. F

Sampled by:	T.F.
Date Sampled:	12/17/98
Time Sampled:	12:50
Date Received:	12/22/98
Time Received:	12:32

00241